jectively based. The age for change from grey to white as reported from other areas is fairly similar to what we have seen in West Greenland (Sergeant 1973; Ognetov 1981), but detailed comparisons are not possible because the statistical methods used for deriving the mean age at change of colour are not specified. However, for belugas in East Baffin, Brodie (1971) reported that whitening occurs after 6 and 7 yr in females and males respectively, which is also evident from this study.

Acknowledgements

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Zusammenfassung

Alters- und Geschlechtsverteilung von Belugafängen, *Delphinapterus leucas*, in Westgrönland und Westrußland

Alter und Geschlecht wurden von Belugas oder Weißwalen *Delphinapterus leucas*, bestimmt, die von 1985–86 und 1989–97 von Eskimos in Westgrönland erlegt wurden. Der Probenumfang umfaßte 712 Weibchen und 596 Männchen. Es gab eine klare Trennung der Wale in der Jagdfischerei, die während des Herbstes in Qaanaaq (früher als Avenersuaq bekannt) und Upernavik, das nördlich des 74 °N Breitengrades liegt, stattfindet. Vor allem nicht geschlechtsreife Wale beider Geschlechter wurden zusammen mit geschlechtsreifen Weibchen gefangen. Zähne dienten der Altersbestimmung. Das Alter wurde an Jahreszuwachsringen (GLGs) im Dentin ermittelt unter der Annahme, daß zwei Zuwachsringe pro Jahr entstehen. Mittelwert und Median für Alter nahmen bei beiden Geschlechtern aus Upernavik von 1985 bis 1994 langsam zu. Sowohl nicht geschlechtsreife als auch geschlechtsreife Wale wurden in den Überwinterungsgebieten der Disko Bucht und südlich des 70 °N Breitengrades entnommen. Die Überlebensrate wurde nach zwei Methoden bestimmt: nach Robson und Chapman (1961) und über den natürlichen Logarithmus des negativen Exponenten einer an die Altersfrequenz angepaßten Kurve. Die Abschätzung der Überlebensrate wurde erschwert durch eine große Anzahl von Walen, denen bedingt durch eine Abnutzung der Zahnkrone nur ein Minimalalter zugeordnet werden konnte (d. h. keine Neonatlinie im Dentin). Die offensichtliche Überlebensrate von Belugas vor Westgrönlands wurde auf 0,81 und 0,79 für Weibchen bzw. Männchen geschätzt. Korrekturen dieser Abschätzung für eine beobachtete Bestandsabnahme von 4,7% pro Jahr ergaben eine tatsächliche Überlebensrate von 0,85 und 0,82 für Weibchen bzw. Männchen. Die Schätzwerte der tatsächlichen Überlebensrate sind geringer als die, welche für die Belugapopulation im Weißen Meer und der Karasee ermittelt wurden, fiir die Altersdaten aus den 70er und frühen 80er Jahren zur Verfügung standen, sowie publizierten Raten für Belugas aus Alaska (1977–83) mit einer vergleichbaren Alterszusammensetzung. Da der Grad der Bejagung in diesen Gebieten wesentlich niedriger ist, bestätigt die geringere Überlebensrate vor Westgrönland deutlich eine Abnahme der Population. Der Wechsel in der Hautfärbung von Grau zu Weiß tritt im mittleren Alter von 8,5 und 9,1 Jahren und bei einer mittleren Länge von 367 cm und 445 cm bei Weibchen bzw. Männchen auf.

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Original investigation

A new species of *Aepeomys* Thomas, 1898 (Rodentia: Muridae) from the Andes of Venezuela

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Abstract

A new species of Neotropical rodent of the genus *Aepeomys* is described based on 24 specimens collected in the Andean region of Venezuela (Lara and Trujillo States). Among the diagnostic characters are: large size; first and fifth digits of pes not extending beyond the commissure of digits 2–3 and the first interphalangeal of digit four, respectively; posterior margin of zygomatic ramus of the maxilla with a distinctive notch; palate extending to the posterior border of M^3 or behind this molar; and paraflexus of M^1 and M^2 divided by an enamel bridge. In addition, the new species shows the following karyological features: 22 chromosomal pairs (2n = 44); 46 autosomal arms (FN = 46); a low proportion of two-armed elements; automosal chromosomes with abundant heterochromatin around the pericentromeric areas; and short arms of chromosomes X and Y entirely heterochromatic. According to the most recent systematic revision of the species assigned to *Aepeomys*, only two forms could be considered as members of this genus: *A. lugens* (the type species) and the taxon described herein. Both have geographic distributions restricted to highlands from the northern Andes, where the new species inhabits primary cloud forests and páramos located in the northeastern extreme of the Venezuelan Andean Cordillera.

Key words: *Aepeomys*, Thomasomyine, Taxonomy, Andes, Venezuela

Introduction

Neotropical sigmodontine rodents of the genus *Aepeomys* are members of the thomasomyine group, together with six additional genera whose systematic and phylogenetic relationships remain unclear: *Delomys* Thomas, 1917; *Phaenomys* Thomas, 1917; *Rhagomys* Thomas, 1917; *Rhipidomys* Tschudi, 1844; *Thomasomys* Coues, 1884; and *Wilfredomys* Avila-Pires, 1960 (Aguilera et al. 1994, 2000; Gómez-Laverde et al. 1997; Musser and Carleton 1993; Reig 1986; Voss 1993). After the original description of *Aepeomys* by Thomas (1898), some authors have considered this taxon as a synonym of *Thomasomys* (e. g., Cabrera 1961; Ellerman 1941; Handley 1976). Nevertheless, the results of the most recent systematic revision of these Andean genera (Pacheco unpubl. data) and several previous publications (e. g., Aguilera et al.

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1994; Gardner and Patton 1976; Musser and Carleton 1993; Reig 1986; Soriano and Ochoa 1997; Soriano et al. 1998) are coincident in considering them as differentiated taxa.

Four nominal species of *Aepeomys* have been described (Cabrera 1961; Musser and Carleton 1993), although at the present time only two of them are recognized as valid taxa (both have geographical distributions restricted to highlands in the northern Andes): *Aepeomys lugens* (Thomas, 1896), recorded in several localities from western Venezuela to Andean Ecuador; and *A. fuscatus* (Allen, 1912), known from the western and central Andes of Colombia. However, the highly differentiated cranial morphology shown by *A. fuscatus* with respect to *A. lugens* (the type species of the genus) and other related forms, has been used among the arguments to consider *A. fuscatus* as representative of a neglected taxon whose evolutionary lineage could be more related with the oryzomyine tribe, representing perhaps an undescribed genus (Pacheco and Voss unpubl. data).

As part of the results of a field study on the small mammal communities inhabiting highland ecosystems from the Andean region of Venezuela (Lara and Trujillo States), we caught a series of thomasomyine specimens whose general morphology corresponds to *Aepeomys* (sensu stricto), although their external, cranial, and karyological features are not referable to previously known species assigned to this genus. Apparently, they represent a new species that we describe below. Some of these specimens, in addition to others collected in the Venezuelan Andes and cited herein as representatives of the new taxon, were formerly recorded as *Aepeomys lugens* or *Aepeomys* sp. by Handley (1976), Soriano et al. (1990), and Aguilera et al. (1994, 2000).

Material and methods

Specimens examined (all adults) are deposited in the following institutions: American Museum of Natural History (AMNH); the Colección de la Estación Biológica de Rancho Grande (EBRG), Maracay, Venezuela; the Colección de Vertebrados de la Universidad de Los Andes (CVULA), Mérida, Venezuela; and the Colección de Vertebrados de la Universidad Simón Bolívar (CVUSB), Caracas, Venezuela. Species, individuals and localities corresponding to this material are as follows: *Aepeomys fuscatus* (1; holotype). Colombia: Valle del Cauca, San Antonio, near Cali, 2 135 m (AMNH-32230). *Aepeomys lugens* (21, including two topotypes). Venezuela-Merida State: Páramo Los Conejos, 24 km W Mérida, 2 928 m (AMNH-96169; holotype of *A. ottlevi*); 5.5 km E + 2 km S Tabay (Middle Refugio), 2 600 m (EBRG-15569 and 15570); 1 km N + 2 km W Mérida (Santa Rosa), 2 020 m (EBRG-15571 and 15572); El Morro, 9 km SSW Mérida City, 2160 m (EBRG-22009 and 22010; topotypes). Tachira State: Páramo Los Colorados (Parque Nacional Páramos Batallón y La Negra), 12 km SSE El Cobre, 3200 m (EBRG-21513 to 21523; CVULA-5747, 5751, and 5753). *Aepeomys reigi* (15). Venezuela-Lara State: El Blanquito, 17 km SE Sanare, Parque Nacional Yacambú, 1 600 m (CVULA-2738; EBRG-4208, 21735, 21440, and 22580 to 22582); Road El Blanquito-Sanare, km 6, Parque Nacional Yacambú, 1 700 m (EBRG-10621); El Avileño, near El Blanquito, 9 km SE Sanare, Parque Nacional (Yacambú, 1 600 m (CVULA-2710 and 2718). Trujillo State: Macizo de Guaramacal, 9 km ESE Boconó, Parque Nacional Guaramacal, 3 100 m (CVULA-3350); Guaramacal, 5 km E Boconó, Parque Nacional Guaramacal, 2 230 m (CVULA-3139); Pica La Toma, 7 km E Boconó, Parque Nacional Guaramacal, 2 300 m (EBRG-22714); 14 to 15 km E Trujillo, near Hacienda Misisí, 2 225 to 2 350 m (EBRG-15567 and 15568). *Thomasomys hylophilus* (5). Venezuela: 35 km S + 22 km W San Cristobal (Buena Vista), Táchira State, 2395 m (EBRG-15597 to 15601). Thomasomys laniger (5) Venezuela: 4 km S + 6.5 km E Tabay (La Coromoto), Mérida State, 3 170 m (EBRG-15227 to 15230); 5 km S + 7 km E Tabay (near La Coromoto), Mérida State, 3 251 m (EBRG-15231). Thomasomys vestitus. (1) Venezuela: El Baho, 3 km SE Santo Domingo, Mérida State, 3 010 m (EBRG-32012).

Age criteria follow Voss (1991). Cranial measurements were taken according to Voss (1988, 1991). Nomenclature of the occlusal components of molar teeth follows Reig (1977). Karyological analyses were carned out on 13 specimens of *A. lugens* and nine specimens representing the new taxon (five from Lara State and four from Trujillo State), including the sample described by Aguilera et al. (2000). Bone marrow metaphase chromosomes were obtained by a modification of Ford and Hamerton's (1956) in vivo colchicine technique. C- and G-banding patterns were obtained as described by BARROS and PATTON (1985) and CHIARELLI et al. (1972), respectively. Chromosome nomenclature followed LEVAN et al. (1964). Fundamental numbers (FN) are autosomal arm numbers.

Results

Aepeomys reigi new species

Holotyoe: A female (dry skin, skull, and karyotype analysis; CVUSB-928) with adult pelage, fused sphenoccipital suture, and the third molar erupted (age class IV). Collected by MARISOL AGUILERA et al. in August 1986 at El Blanquito, Parque Nacional Yacambú, 17 km SE Sanare, Lara State, Venezuela, 1 600 m (approx. 9°40′ N; 69°37′ W; Fig. 1).

Paratypes: Seven specimens (6 as dry skins and skulls; one in alcohol) with karyotype analysis: Lara State, Parque Nacional Yacambú, El Blanquito, 17 km SE Sanare, 1 600 m; 3 males and 1 female collected by

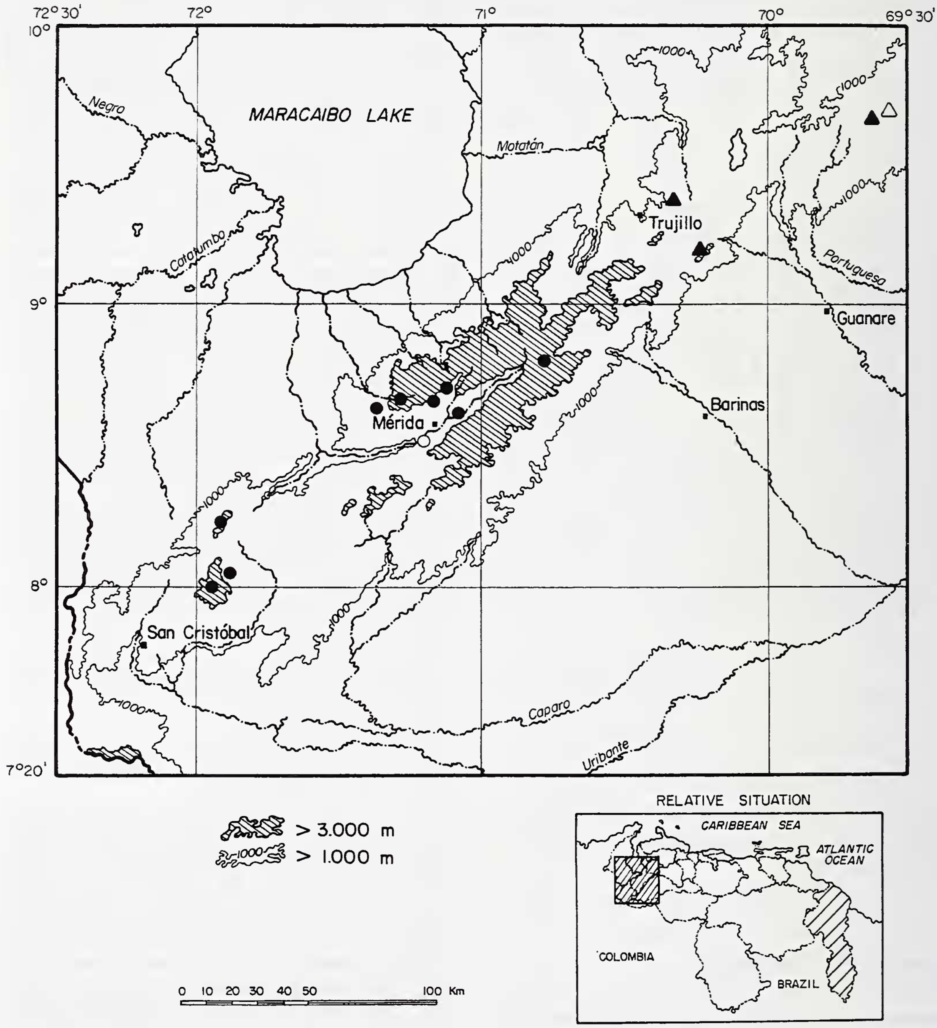

Fig. 1. Distribution of *A. reigi* (triangles) and *A. lugens* (circles) in Venezuela. White symbols correspond to the type localities.

M. Aguilera et al. (CVUSB-927, 1365, 1419, and 1420). Trujillo State, Parque Nacional Guaramacal (approx. 9°15′ N; 70°12′ W), Pica La Toma, 7 km E Boconó, 2 300 m; 1 male and 2 females collected by J. Ochoa et al. (EBRG-22715 to 22717).

Etymology: The epithet *reigi* honors the memory of Dr. Oswaldo Reig, who devoted his life to the study of the systematics and evolution of South American rodents, and made important contributions to the education and encouragement of many Latin American mammalogists.

Distribution: Known only in highlands (1 600–3 230 m) from the northeastern extreme of the Venezuelan Andes (Lara and Trujillo States).

Diagnosis: Size large for the genus as indicated by external and cranial measurements (Tab. 1), in addition to postcranial skeleton development; first and fifth digits of pes not extending beyond the commissure of di-

Table 1. Selected external and cranial measurements (in millimeters) of adult specimens of *Aepeomys reigi* and *Aepeomys lugens* (age classes 2–4) from Venezuela. Data are: Mean ± SD, (range), and sample size.
[1] Sample includes two topotypes and the holotype of *Aepeomys* (see specimens examined).

Measurement	*A. reigi*	*A. lugens*[1]
Length of head and body	113.6 ± 5.88 (104–125)15	110.1 ± 7.54 (100–119)7
Length of tail	127.1 ± 8.29 (116–142)15	121.7 ± 4.15 (114–127)7
Length of hind foot	27.9 ± 1.30 (25–30)15	27.0 ± 3.96 (20–30)7
Condylo-incisive length	27.8 ± 0.84 (26.6–29.3)16	26.6 ± 0.58 (25.8–27.6)17
Length of diastema	8.6 ± 0.31 (8.0–9.0)18	8.2 ± 0.25 (7.7–8.7)18
Length of molars	4.5 ± 0.11 (4.3–4.8)18	4.3 ± 0.12 (4.0–4.4)18
Length of incisive foramen	5.6 ± 0.22 (5.2–6.0)16	5.5 ± 0.20 (5.1–5.9)18
Breadth of incisive foramen	2.4 ± 0.18 (2.2–2.7)16	2.3 ± 0.14 (2.0–2.5)18
Breadth of rostrum	5.0 ± 0.23 (4.6–5.3)14	4.5 ± 0.27 (4.0–5.1)16
Breadth of palatal bridge	3.8 ± 0.16 (3.5–4.0)17	3.5 ± 0.25 (3.0-4.0)17
Breadth of zygomatic plate	1.8 ± 0.13 (1.6–2.1)18	1.8 ± 0.14 (1.5–2.0)18
Least interorbital breadth	6.1 ± 0.17 (5.9–6.4)17	6.0 ± 0.26 (5.6–6.4)18
Breadth of braincase	13.3 ± 0.22 (12.9–13.7)17	13.1 ± 0.35 (12.4–13.8)18
Zygomatic breadth	14.8 ± 0.37 (14.2–15.6)15	14.1 ± 0.38 (13.6–14.9)17
Depth of incisors	1.3 ± 0.11 (1.0–1.4)17	1.2 ± 0.11 (1.0–1.4)18
Length of orbital fossa	9.1 ± 0.24 (8.6–9.6)17	8.4 ± 0.21 (8.0–8.8)17

gits 2–3 and the first interphalangeal of digit four, respectively; posterior margin of zygomatic ramus of the maxilla with a distinct notch; palate extending to the posterior border of M^3 or behind this molar; interparietal length (along an antero-posterior axis) near half of parietal length; and parafiexus of M^1 and M^2 divided by an enamel bridge that crosses from the paracone to the base of the anteroloph. Karyotype with 22 chromosomal pairs (2n = 44), 46 autosomal arms (FN = 46), a low proportion of two-armed elements, the automosal chromosomes with abundant heterochromatin around the pericentromeric areas, and the short arms of the chromosomes X and Y entirely heterochromatic.

Description: Length of head and body 104–125 mm. Tail approximately as long as body (Tab. 1), sparsely covered by short dark-brown hairs and unicolored (dark above and below). Legs, heels, and dorsal surface of pes sparsely covered by brown hairs. Body pelage dense and soft (longer in specimens from the highest altitudes). Dorsal coloration ranging from dark gray-brown to reddish gray-brown, with moderately to intensively hoary appearance. Dorsal fur consisting of shorter hairs (approx. 9–12 mm) with golden tips and scattered longer hairs (approx. 12–15 mm) with dark brown tips (in a few cases with whitish tips); both having the basal 75% gray. Ventral pelage shorter (approx. 7 mm) and paler than dorsum, ranging from moderately to intensively hoary (hairs with golden tips and the basal 75% gray). Pinnae 18–21 mm long and furred on both sides; inside part yellowish, contrasting in color with the dorsal fur. Manus cream-colored and paler than hind feet. Pes narrow and long (adapted for terrestrial life; Tab. 1); first and fifth digits not extending beyond the commissure of digits 2–3 and the first interphalangeal of digit four, respectively.

Incisors narrow and moderately developed (not robust), with sharp tips. Upper incisors with the anterior surface slightly concave. Maxillary and mandibular toothrows relatively short (Tab. 1; Fig. 2): first molars antero-posteriorly elongated (length averages approximately 50% of their respective toothrows). Upper molars with rounded protocone and hypocone, and the paracone and metacone antero-posteriorly sharp. Paraflexus of M^1 and M^2 divided by an enamel bridge that crosses from the paracone to the base of the anteroloph, producing an internal fosseta. M^3 with triangular shape in dorsal view. M_1 with a distinctive protolophid in most specimens, which reaches the cingulum.

Skull with general appearance resembling a typical *Aepeomys* (see Fig. 2 and 3 for comparisons with *A. lugens*). Rostrum narrow and elongated (approx. 1/3 of the greatest length of skull), with acute profile and only the external capsule of the nasolacrimal foramen exposed in dorsal view; nasal and premaxillary bones extending beyond the anterior surface of incisors and the gnathic process to form a distinct rostral tube. Nasals laterally concave and flat in dorsal profile, forming a continuous surface with the premaxillae; posterior border extending to the level of the zygomatic plate. Interorbital constriction relatively broad, without concealing (in dorsal view) the labial ridge of maxillary and the molars. Braincase moderately inflated and slightly concave in dorsal profile; the posterior surface concealing the occipital condyles in dorsal view. Interparietal length (along an antero-posterior axis) near half of parietal length. Lambdoidal ridges scarcely developed. Zygomatic arches completely ossified, filamentous and fragile. Zygomatic plate relatively narrow (Tab. 1; Fig. 3), with the posterior edge extending to the first molar (Fig. 2). Posterior margin of zygomatic ramus of the maxilla with a distinct notch. Lumen of the infraorbital foramen compressed laterally and expanded dorso-ventrally. Gnathic process scarcely developed. Masseteric tubercle large. Palatal bridge moderately long (Tab. 1; Fig. 2), extending to the posterior border of M^3 or behind this molar. Posterior margin of palate without medial process in most specimens; therefore, the anterior margin of the mesopterygoid fossa has a shallow shape. Incisive foramina extending posteriorly beyond the masseteric tubercle,

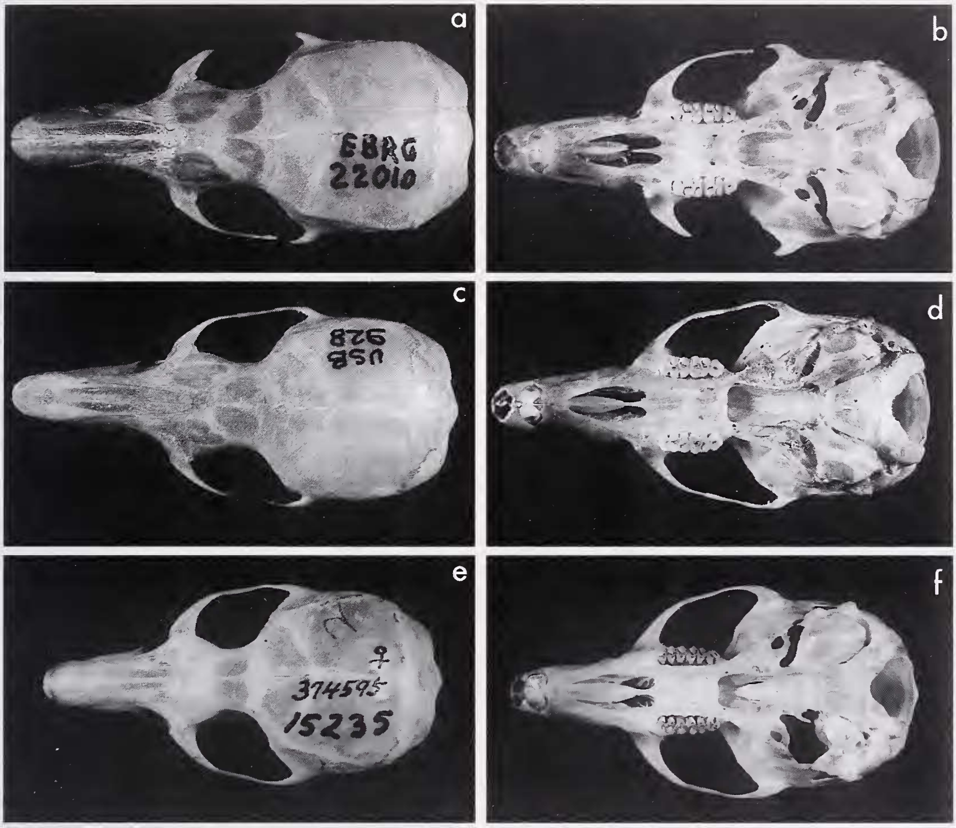

Fig. 2. Dorsal and ventral views of crania of *Aepeomys lugens* (topotype; a, b), *Aepeomys reigi* (holotype; c, d), and *Thomasomys laninger* (e, f). Approx. X1.9.

without reaching the level of the first molar; margins of the anterior half strongly convergent anteriorly. Postglenoid foramen compressed dorso-ventrally and expanded antero-posteriorly. Foramen magnum with the inferior border almost reaching the level of the auditory bulla. Auditory bulla moderately inflated. Mandible with the tip of the condylar process behind the angular process.

Karyotype with 22 chromosomal pairs (2n = 44), 46 autosomal arms (FN = 46), and low proportion of two-armed elements (Aguilera et al. 1994). Automosal chromosomes with abundant heterochromatin around the pericentromeric areas. Short arms of chromosomes X and Y entirely heterochromatic (Aguilera et al. 2000).

Comparisons: Among the thomasomine group, the genus most closely related to *Aepeomys* is believed to be *Thomasomys* (Aguilera et al. 2000; Gardner and Patton 1976), whose cranial morphology is clearly differentiated from *A. reigi* and *A. lugens* in the following features (Fig. 2 and 3): shorter rostrum; zygomatic arches more expanded laterally; narrower interorbital region; braincase less inflated at the level of lambdoidal ridges; broader zygomatic plate; larger incisive foramina (almost reaching the first molars); and shorter palate (posterior border not extending beyond the third molar). In addition, Venezuelan species of *Thomasomys* are larger (*T. aureus*, *T. hylophilus*, and *T. vestitus*) and/or have much paler brownish fur (*T. hylophi-*

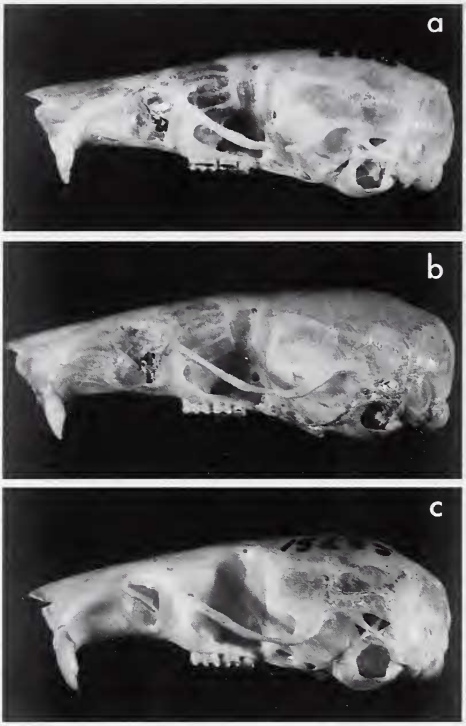

Fig. 3. Lateral views of crania of *Aepeomys lugens* (topotype; a), *Aepeomys reigi* (holotype; b), and *Thomasomys laniger* (c). Approx. X1.8.

lus. T. vestitus and *T. laninger*) than *Aepeomys lugens* and *A. reigi*.

With respect to the species previously included within *Aepeomys*, *A. reigi* resembles the external and cranial morphology of *A. lugens*, except for the following differences: size larger (Tab. 1); fur on head and body shorter and rougher; manus and pes broader; legs, heels, and dorsal surface of pes sparcely haired (densely haired in *A. lugens*); first and fifth digits of pes shorter; posterior margin of zygomatic ramus of the maxilla with a distinct notch, rather than shallow as in *A. lugens* (as consequence, in *A. reigi* the orbital fossa is larger, Tab. 1); incisive foramina broader, with margins showing a more convergent position anteriorly; interparietal longer in most specimens (antero-posterior midline near half of the parietal length, rather than 30–40% as in *A. lugens*); palate extending to the posterior border of M^3 or behind this molar (near or before the posterior border of M^3 in *A. lugens*); posterior margin of palate without medial process in most specimens (therefore the anterior margin of the mesopterygoid fossa is shallow rather than incipiently biconcave as in *A. lugens*); maxillary toothrow relatively longer; M^3 larger and triangular in dorsal view (rounded in *A. lugens*); M^1 and M^2 with paraflexus divided by an enamel bridge (continuous in most specimens of *A. lugens*); coronoid and condylar processes broader and larger, producing deeper sigmoid and angular notches, respectively. M_1 with a distinctive protolophid in most specimens, which reaches the cingulum (reduced or absent in *A. lugens*). Some of these features (particularly those related with cranial and dental morphology) show the maximun divergence in specimens of *A. reigi* from Lara State. In addition, *A. lugens* has a very different karyotype, with fewer chromosomal pairs ($2n = 28$ vs $2n = 44$), more autosomal arms ($FN = 48$ vs $FN = 46$), and a lower concentration of heterochromatin (especially conspicuous in the short arms of two autosomal pairs and the Y chromosome; Aguilera et al. 1994, 2000). These chromosomal variations were consistent when we compared *A. reigi* with specimens of *A. lugens* from two localities in Venezuela: the type locality (El Morro, Mérida State) and Páramo Los Colorados, Táchira State (Aguilera et al. 2000).

Regarding *A. fuscatus* the external and cranial features of this species show a high degree of differentiation with *A. reigi*, revealing a morphological pattern that appears to be taxonomically separated from the thomasomyine group and perhaps corresponds to a taxon whose evolutionary lineage is more related with the oryzomyine tribe (Pacheco and Voss unpubl. data). Among the most conspicuous characteristics in *A. fuscatus* supporting this assessment are: darker fur coloration; shorter and broader rostrum (without the acute profile shown by *A. reigi* and *A. lugens*); anterior portion of zygomatic arches more expanded and broader; broader zygomatic plate; narrower interorbital breadth; braincase less inflated; shorter incisive foramina and palate; and broader mandibular branches. These features, in addition to the extremely high number of chromosomal pairs (2n = 54) and autosomal arms (FN = 62) reported by GARDNER and PATTON (1976) for *A. fuscatus* are clear evidences of a differentiated evolutionary pattern with respect to *Aepeomys.*

Discussion

The morphological variation between *A. reigi* and *A. lugens*, in addition to the high degree of differentiation in the number and structure of chromosomes, support the hypothesis of evolutionary divergences in both species, such as it has been proposed for other thomasomyine rodents (GARDNER and PATTON 1976; GÓMEZ-LAVERDE et al. 1997). Despite the higher diploid number in *A. reigi* with respect to *A. lugens* (44 vs 28), and based on their similarities in fundamental numbers (46 vs 48, respectively), we postulate that karyological differences found in these species could be reached by chromosomal rearrangements evolving principally robertsonian changes (AGUILERA et al. 2000).

An important aspect within the evolutionary context of *Aepeomys* species, is the direction of chromosomal transformation in *A. reigi* and *A. lugens.* According to GARDNER and PATTON (1976), thomasomyine karyotypes are characterized by a generalized condition of diploid number of 42 or 44, in addition to a predominantly acrocentric autosomal complement. This generalized condition is present in *A. reigi* and allows to consider it as a primitive form. This fact, together with the great proportion of two-armed elements shown by the karyotype of *A. lugens*, are arguments to postulate this last species as a derived form (AGUILERA et al. 2000). Some complementary evidences supporting this hypothesis are the differences in quantity and distribution of the constitutive heterochromatin: low and chromosomal restricted in *A. lugens* vs abundant and distributed in chromosomes of *A. regi*; the last pattern has been associated with a primitive condition in eukariotic chromosomal evolution (IMAI 1991).

The geographic distribution of *A. reigi* seems to be allopatric with respect to *A. lugens*, at least in the northeastern extreme of the Venezuelan Andean Cordillera. However, we do not reject the possibility of sympatric distribution in highlands (> 1 500 m) near to the border of Merida and Trujillo States. Future karyological studies, in a more extensive area, are required to provide a further diagnosis on the biogeographic patterns of these taxa. Other nonvolant small mammals recorded at Yacambú and Guaramacal are: *Caluromys philander*, *Didelphis albiventris*, *Didelphis marsupialis*, *Gracilinanus dryas*, *Marmosops fuscatus*, *Micoureus demerarae*, *Cryptotis meridensis*, *Mustela frenata*, *Sciurus granatensis*, *Heteromys anomalus*, *Akodon urichi*, *Ichthyomys hydrobates*, *Microryzomys minutus*, *Neacomys tenuipes*, *Oecomys flavicans*, *Oligoryzomys fulvescens*, *Oryzomys meridensis*, *Rhipidomys venustus*, *Rhipidomys venezuelae* and *Thomasomys laninger* (SORIANO et al. 1990).

The known ecological distribution of *A. reigi* corresponds to primary cloud forests (humid montane forest according to HUBER and ALARCÓN 1988) and small patches of páramos surrounded by continuous masses of cloud forests; these ecosystems, in addition to seasonal forests and evergreen dry forests, have been previously recorded among the ecological conditions used by *A. lugens* (HANDLEY 1976; SORIANO et al. 1990). *A. reigi* appears to be a relatively uncommon species along its ecological range. Even though field data for páramos are insufficient, sampling efforts of 3 724 trap-nights in cloud forests, accumulated during inventories conducted by the authors, allowed to catch 27 individuals of *A. reigi* that represented 10.6% of total non-volant small mammals trapped in this ecosystem (*Oryzomys albigularis* and *Heteromys anomalus* were the dominant species). Collected specimens have been found on the ground in densely forested sites (beside logs, at the base of trees, in rocky places, along trails, or near small streams) or in open areas (close to the